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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.       | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------------|------------------|
| 10/678,689  | 10/03/2003  | Ian A. Cody          | JJK-0330(P2002J098)       | 9953             |
| 27810   | 7590        | 08/03/2006           |                           |                  |
| EXXONMOBIL RESEARCH AND ENGINEERING COMPANY<br>P.O. BOX 900<br>1545 ROUTE 22 EAST<br>ANNANDALE, NJ 08801-0900 |             |                      | EXAMINER<br>NGUYEN, TAM M |                  |
|   |             |                      | ART UNIT<br>1764          | PAPER NUMBER     |

DATE MAILED: 08/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/678,689

Applicant(s)

CODY ET AL.

Examiner

Tam M. Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 7-14, 18-27 and 29-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-14, 18-27 and 29-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/21/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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Claims 1-3 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiao et al. (6,264,826) in view of either Lucien et al. (4,906,350) or Cody et al. (5,935,417)

Xiao discloses a process for preparing lubricating base oils from a sulfur containing feedstock. The feedstock comprising greater than 50 wt.% of wax is fed into a mild hydrotreating zone wherein nitrogen and sulfur compounds are removed. The hydrotreating zone is operated at a temperature of from 260 to 427° C, at a pressure of from less than 11 Mpa, at LHSV of about 0.5, and at hydrogen rate of about 722 m<sup>3</sup>/m<sup>3</sup>. The hydrotreating is operated so that the conversion is less than 5%. The effluent from the hydrotreating zone is passed into a separation to separate gas from a liquid product which is then fed into a dewaxing zone containing a dewaxing catalyst including ZSM-23 and SAPO-11, a metal hydrogenation component (e.g., Pt or Pd). The dewaxing process is operated at temperature of from 400 to 900° F, at a pressure of from .45 to 20.8 Mpa, at LHSV of from about 0.1 to 5 hr<sup>-1</sup>, and at hydrogen gas rates of from 89.1 to 1780 m<sup>3</sup>/m<sup>3</sup>. The product from the dewaxing zone is then passed into a hydrofinishing zone to provide a final product. (See col. 2, line 51 through col. 6, line 59; col. 8, line 53 through col. 10, line 40)

Xiao does not teach that the hydrotreated feedstock has VI increase less than 4 greater than the VI of the feedstock and does not disclose that the dewaxing catalyst is ZSM-48.

Both Lucien and Cody teach that ZSM-5 and/or ZSM-48 can be utilized in a dewaxing process. (See Lucien, claim 2; Cody; col. 7, lines 10-16)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Xiao by operating the hydrotreating zone at even more mild conditions to produce a hydrotreated product having VI increase less than 4

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greater than the VI of the feedstock as claimed because operating the hydrotreating zone at severe conditions would produce a desired low sulfur product, but such conditions would cost more to operate and would hydrogenate desirable products such as olefins. Therefore, one of skill in the art would select to operate the Xiao process to produce a hydrotreated product as claimed when one desires to operate the hydrotreating zone with no hydrogenation or very little hydrogenation of desirable products (e.g., olefins.).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Baker by using a second catalyst such as ZSM-5 because both Lucien and Cody teaches that ZSM-5 and ZSM-48 can be used as a dewaxing catalyst.

Claims 11-14, 18-27, and 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiao et al. (6,264,826) in view of Kresge et al. (5,837,639) and either Lucien et al. (4,906,350) or Cody et al. (5,935,417)

Xiao does not disclose that the hydrotreating catalyst (hydrofinishing catalyst) is MCM-41, does not disclose that the dewaxing catalyst is ZSM-48, and does not disclose that the hydrofinished product has an aromatics content of about zero.

Kresge teaches the use of MCM-41 as a hydrotreating catalyst. (See col. 4, lines 57-68; col. 5, lines 1-16; col. 33, lines 33-37)

Both Lucien and Cody teach that ZSM-5 and/or ZSM-48 can be utilized in a dewaxing process. (See Lucien, claim 2; Cody; col. 7, lines 10-16)

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Xiao by using MCM-41 as a hydrofinishing catalyst because Kresge teaches that MCM-41 is a highly effective hydrotreating catalyst.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Baker by using a second catalyst such as ZSM-5 because both Lucien and Cody teaches that ZSM-5 and ZSM-48 can be used as a dewaxing catalyst.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Xiao by producing a product comprising essentially zero aromatics as claimed because it is within the level of one of skill in the art to operate the hydrofinishing step at any effective condition to eliminate essentially all undesired compounds such as aromatics from the dewaxing product. (See col. 11, lines 47-51)

### ***Response to Arguments***

The argument that Xiao teaches that the hydrotreating step increases the VI by at least 5 VI units is not persuasive because the examiner maintains that it is within the level of one of skill in the art to operate dewaxing step at effective conditions to produce a product having the claimed VI when a specific VI of the product is desired.

The argument that the examiner does not explain why one would want preserve olefins to produce a high VI product is not persuasive because of the response above.

The pore size distributions of mesoporous crystalline material of Kresege are different from the macroporous materials of Xiao is not persuasive. The examiner maintains that one of

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skill in the art would use *any effective hydrofinishing catalyst* including the catalyst of Kresege whether the catalyst of Kresege is mesoporous or macroporous.

The argument that ZSM-5 and ZSM-48 are not equivalent is not persuasive because as suggested by either Lucien and Cody, either ZSM-5 or ZSM-48 can be used in the dewaxing process, one of skill in the art would use either ZSM-5 or ZSM-48 in the dewaxing process of Xiao.

Since the modified process of Xiao is similar to the claimed process in terms of feedstock, operating conditions, and catalysts, it would be expected that the product of Xiao would have the characteristics as claimed.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (571) 272-1452.

The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tam M. Nguyen  
Examiner  
Art Unit 1764



TN